Plague (*Yersinia pestis*)

Revision 10/28/02

Missouri Dept of Health and Senior Services (800) 392-0272 (24 hour)
State Public Health Laboratory (573) 751-3334 or 751-0633

Remember that these samples may be highly infective! Extreme caution should be taken in collecting, preparing for shipment and transporting any material suspected of being contaminated with a biological agent.

Specimen collection and transport

Clinical:

Specimens best suited for culturing include: fluid aspirated from bubo, sputum and blood (multiple). Also, lymph node, bone marrow and lung tissues are suitable, but may be available only at autopsy. The specimens may be placed into Cary-Blair [enteric] transport media or, if that's unavailable, any sterile container and transported to the MSPHL as quickly as possible.

Reference cultures:

Any culture may be submitted to the MSPHL for confirmation/identification. Cultures suspected of being *Yersinia pestis* can be submitted on a blood or chocolate agar slant.

Environmental samples:

Plague is enzootic in some southwestern states and the risks of acquiring the disease are associated with conditions that provide food and shelter near human dwellings for plague-susceptible rodents and their attendant fleas. If environmental sampling is indicated, consult the MSPHL for guidelines on sample selection and submission.

Testing available:

Culture, isolate identification, PCR and rapid direct antigen detection by TRF.

Reporting:

All reporting times are the minimum time. Any individual specimen could take longer.

Yersinia pestis is not fastidious and may grow in 24-48 hours from clinical or environmental specimens. The MSPHL can perform an FA, PCR and

TRF testing on the organism as soon as growth is apparent. A presumptive positive could be reported in 4-6 hours. Biochemical confirmation is presumptive at 24 hours and final at 48 hours. FA, PCR and TRF can be performed on isolates upon receipt at the MSPHL, with results in 1-6 hours.